



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,792	02/14/2002	Hironori Aoki	542-007-2	6079
4955 7590 08/19/2008 WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN, BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468				
EXAMINER				
DUONG, THOI V				
ART UNIT		PAPER NUMBER		
2871				
MAIL DATE		DELIVERY MODE		
08/19/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/049,792

Applicant(s)

AOKI, HIRONORI

Examiner

THOI V. DUONG

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6, 8-12, 15-18 and 22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3, 5, 6, 8-12, 15-18 and 22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on April 02, 2008 has been entered.

Accordingly, claims 1 and 3 were amended, claims 4, 7, 13, 14 and 19-21 were cancelled, and new claim 22 was added. Currently, claims 1-3, 5, 6, 8-12, 15-18 and 22 are pending in this application.

Oath/Declaration

2. The declaration under 37 CFR 1.132 filed June 30, 2008 is insufficient to overcome the rejection of claims 1-3, 5, 6, 8-12, 15-18 and 22 based upon Dohjo et al. (Dohjo, US 6,078,366) in view of Sakata et al. (Sakata, JP 11-284195) as set forth in the last Office action because the facts presented are not germane to the rejection at issue.

Applicant shows that the contact resistance of the claimed invention between the auxiliary capacitance line and the collected auxiliary capacitance line reduced to the

level of several tens ohm, which is better than that of Sakata shown in page 16. However, it is noted that a greater than expected results is an evidentiary factor pertinent to the legal conclusion of obviousness of the claims at issue. See MPEP § 716.02(a).

Thus, it include(s) statements which amount to an affirmation that the claimed subject matter functions as it was intended to function. This is not relevant to the issue of nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP § 716.

Further, it refer(s) only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5, 6, 8-12, 15-18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dohjo et al. (Dohjo, USPN 6,078,366) in view of Sakata et al. (Sakata, JP 11-284195).

Re claim 1, as shown in Figs. 1, 3, 5 and 13, Dohjo discloses an array substrate 100 comprising:

a display area (TFT region) in which pixel electrodes 131 are formed;
a scanning line 111 formed of a low resistivity metal (col. 7, lines 16-27), said scanning line being arranged between the pixel electrodes 131;
a signal line 110 formed of a high melting point metal such as Mo, Ta or its alloy (col. 7, lines 28-37), said signal line crossing over the scanning line 111 interposing an insulating layer 115 therebetween;

a terminal 152 (first terminal) to which a scanning signal is applied, and an extended scanning line 125a for connecting the scanning line 111 with the terminal 152, said extended scanning line being formed only of the same conductive film as for said signal line 110,

wherein, re claim 6, the extended scanning line 125a is electrically connected to the scanning line 111 through contact holes 153, 154 at the neighborhood of the display area and electrically connected to the terminal 152 for the scanning signal through contact holes 155, 156 at the neighborhood of the terminal (see Figs. 1 and 3);

wherein, re claim 15, the scanning line 111 and the extended scanning line 125a are electrically connected via a conductive film of the same layer 131 as that for the pixel electrode;

wherein, re claim 17, the extended scanning line 125a is formed in a grid like shape at a region (Base section in Fig. 3) in which the scanning line and the extended scanning line are overlapped within a connecting portion between the scanning line and the extended scanning line; and

where, re claim 12, aluminum or aluminum alloy is used for material of the scanning line (col. 7, lines 16-27).

Re claims 2 and 3, as shown in Figs. 28 and 31, the array substrate further comprises:

an auxiliary capacitance line 113 arranged in parallel to the scanning line 111 (Fig. 28 and col. 23, lines 54-55);

a collected auxiliary capacitance line (dotted line of storage capacitor-line connecting section 190 in Fig. 28) arranged in parallel to the signal line 110 and electrically connected to the auxiliary capacitance line 113;

a terminal (second terminal) to which a common signal is applied (at top left of Fig. 28); and

an extended auxiliary capacitance line 125 for connecting the collected auxiliary capacitance line with the terminal for the common signal (Fig. 31), said extended auxiliary capacitance line being formed only of the same conductive film as for said signal line (col. 23, lines 54-64),

wherein, re claims 5 and 8, the collected auxiliary capacitance line and the extended auxiliary capacitance line are electrically connected via a conductive film 193 of the same layer as that for the pixel electrode (Fig. 31);

wherein, re claim 9, the extended auxiliary capacitance line 125 is electrically connected to the collected auxiliary capacitance line at the neighborhood of the display area through a contact hole 192 and electrically connected to the terminal for the common signal through a contact hole 194 at the neighborhood of the terminal;

wherein, re claim 10, the auxiliary capacitance line 113, the collected auxiliary capacitance line and the scanning line 111 are formed from the conductive film of same layer (col. 23, lines 42-45);

wherein, re claim 11, the collected auxiliary capacitance line and the extended scanning line are crossing interposing an insulating layer 117 therebetween (Fig. 31);
and

wherein, re claim 18, the extended auxiliary capacitance line 125 is formed in a grid like shape at a region 190 in which the collected auxiliary capacitance line and the extended auxiliary capacitance line are overlapped within a connecting portion between the collected auxiliary capacitance line and the extended auxiliary capacitance line (see Fig. 31).

Finally, re claim 16, Dohjo also discloses in another embodiment that the extended scanning line and the pixel electrodes are formed from the conductive film of same layer (col. 5, lines 27-45). Since the extended auxiliary capacitance line is formed at the same layer as the extended scanning line, the extended auxiliary capacitance line and the pixel electrodes are also formed from the conductive film of same layer.

Claim 22 contains the limitations of claims 1 and 2, which are rejected as shown above.

Dohjo discloses an array substrate that is basically the same as that recited in claims 1, 3 and 22 except that the material used for the scanning line is not nitridated aluminum or nitridated aluminum alloy. Sakata discloses a process in which impurity constituted of one of N, O, Si and C is added to an upper layer of a scanning line

formed of pure aluminum or aluminum alloy to directly provide low contact resistance (paragraph 11).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the array substrate of Dohjo with the teaching of Sakata by using partly or wholly nitridated aluminum or partly or wholly nitridated aluminum alloy for the scanning lines so as to obtain a low contact resistance (see Abstract).

Response to Arguments

5. Applicant's arguments filed on April 02, 2008 and June 30, 2008 have been fully considered but they are not persuasive.

Applicant argued that, according to a declaration from inventor Hironori Aoki, the claimed invention is capable of reducing the contact resistance between the auxiliary capacitance line and the collected auxiliary capacitance line to the level of several tens ohm, while the conventional array substrates are difficult to reduce the contact resistance between the auxiliary capacitance line and the collected auxiliary capacitance line to the level of several tens ohm. The Examiner disagrees with Applicant's remarks since the data in the declaration are not compatible because the contact resistance of the claimed invention is expressed in ohms while the contact resistance of Sakata is expressed in Ohm per micrometer² (page 16).

Moreover, the declaration under 37 CFR 1.132 is insufficient to show unexpected results. The declaration just shows that the contact resistance of the claimed invention is better than that of Sakata since it can be reduced to several tens of ohms, less than

the contact resistance mentioned in Sakata. However, a greater than expected result is an evidentiary factor pertinent to the legal conclusion of obviousness of the claims at issue (see MPEP 716.02(a)).

Further, the declaration does not show that the objective evidence of non obviousness is commensurate in scope with the claims. Applicant argued that Sakata fails to show a contact resistance of several tens of ohms of Applicant's invention; however, the features upon which applicant relies (i.e., a contact resistance of several tens of ohms) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, the configuration of a scanning line formed of partly or wholly nitridated aluminum or partly or wholly nitridated aluminum alloy of the claimed invention recited in claims 1, 3 and 22 and that of Sakata is substantially identical. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent; therefore, a prima facie of obviousness has been established (see MPEP 2112.01). Accordingly, the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.

In conclusion, claims 1-3, 5, 6, 8-12, 15-18 and 22 are still obvious in view of the combination of Dohjo and Sakata because those claims still produce expected results compared to the cited references.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

/Thoi V. Duong/ - Primary Examiner

August 15, 2008